



# SEQUENCE LISTING

<110> Ludevid, Dolores  
Torrent, Margarita  
Alvarez, Inaki  
Perez, Pascual

<120> Amino acid-enriched plant protein reserves, particularly  
lysine-enriched maize-zein, and plants expressing such proteins

<130> 50062/004001

<140> US 09/117,246

<141> 1998-12-03

<150> PCT/FR97/00167

<151> 1997-01-28

<150> FR96/01004

<151> 1996-01-29

<160> 24

<170> PatentIn version 3.3

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Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro  
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ccg gtt cat cta ccg ccg ccg gtg cat ctg cca cct ccg gtt cac ctg 144

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cca	cct	ccg	gtg	cat	ctc	cca	ccg	ccg	gtc	cac	ctg	ccg	ccg	ccg	gtc	192
Pro	Pro	Pro	Val	His	Leu	Pro	Pro	Pro	Val	His	Leu	Pro	Pro	Pro	Val	
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cac	ctg	cca	ccg	ccg	gtc	cat	gtg	ccg	ccg	ccg	gtt	cat	ctg	ccg	ccg	240
His	Leu	Pro	Pro	Pro	Val	His	Val	Pro	Pro	Pro	Val	His	Leu	Pro	Pro	
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cca	cca	tgc	cac	tac	cct	act	caa	ccg	ccc	cgg	cct	cag	cct	cat	ccc	288
Pro	Pro	Cys	His	Tyr	Pro	Thr	Gln	Pro	Pro	Arg	Pro	Gln	Pro	His	Pro	
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Gln	Pro	His	Pro	Cys	Pro	Cys	Gln	Gln	Pro	His	Pro	Ser	Pro	Cys	Gln	
			100					105					110			
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Leu	Gln	Gly	Thr	Cys	Gly	Val	Gly	Ser	Thr	Pro	Ile	Leu	Gly	Gln	Cys	
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Val	Glu	Phe	Leu	Arg	His	Gln	Cys	Ser	Pro	Thr	Ala	Thr	Pro	Tyr	Cys	
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Ser	Pro	Gln	Cys	Gln	Ser	Leu	Arg	Gln	Gln	Cys	Cys	Gln	Gln	Leu	Arg	
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Gln	Val	Glu	Pro	Gln	His	Arg	Tyr	Gln	Ala	Ile	Phe	Gly	Leu	Val	Leu	
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Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val  
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His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro  
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Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro  
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Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln  
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Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln Cys  
 115 120 125

Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr Cys  
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Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu Arg  
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Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val Leu  
 165 170 175

Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly Leu  
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Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu	
35 40 45	
cca cct ccg gtg cat ctc cca ccg ccg gtc cac ctg ccg ccg ccg gtc	192
Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val	
50 55 60	
cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg	240
His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro	
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Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Ile Glu Phe Lys Pro	
85 90 95	
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Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys Pro Lys	
100 105 110	
cca aaa gaa ttc ctg cag ccc ctg cag gga acc tgc ggc gtt ggc agc	384
Pro Lys Glu Phe Leu Gln Pro Leu Gln Gly Thr Cys Gly Val Gly Ser	
115 120 125	
acc ccg atc ctg ggc cag tgc gtc gag ttt ctg agg cat cag tgc agc	432
Thr Pro Ile Leu Gly Gln Cys Val Glu Phe Leu Arg His Gln Cys Ser	
130 135 140	
ccg acg gcg acg ccc tac tgc tcg cct cag tgc cag tcg ttg cgg cag	480
Pro Thr Ala Thr Pro Tyr Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln	
145 150 155 160	
cag tgt tgc cag cag ctc agg cag gtg gag ccg cag cac cgg tac cag	528
Gln Cys Cys Gln Gln Leu Arg Gln Val Glu Pro Gln His Arg Tyr Gln	
165 170 175	
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180 185 190	
agc ggc cag gtc gcg ggg ctg ttg gcg gcg cag ata gcg cag caa ctg	624

Ser Gly Gln Val Ala Gly Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu  
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Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val  
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His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro  
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Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Ile Glu Phe Lys Pro  
 85 90 95

Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys Pro Lys  
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Pro Lys Glu Phe Leu Gln Pro Leu Gln Gly Thr Cys Gly Val Gly Ser  
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Thr Pro Ile Leu Gly Gln Cys Val Glu Phe Leu Arg His Gln Cys Ser  
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Pro Thr Ala Thr Pro Tyr Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln  
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Gln Cys Cys Gln Gln Leu Arg Gln Val Glu Pro Gln His Arg Tyr Gln  
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Ala Ile Phe Gly Leu Val Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln  
180 185 190

Ser Gly Gln Val Ala Gly Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu  
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Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu  
35 40 45  
cca cct ccg gtg cat ctc cca ccg ccg gtc cac ctg ccg ccg ccg gtc 192  
Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val  
50 55 60  
cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg 240  
His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro  
65 70 75 80  
cca cca tgc cac tac cct act caa ccg ccc cgg cct cag cct cat ccc 288  
Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro  
85 90 95

cag cca cac cca tgc ccg tgc caa cag ccg cat cca agc ccg tgc cag	336
Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln	
100 105 110	
atc gaa ttc aaa cca aag cca aag ccg aag cca aaa gaa ttc ctg cag	384
Ile Glu Phe Lys Pro Lys Pro Lys Pro Lys Pro Lys Glu Phe Leu Gln	
115 120 125	
ccc ctg cag gga acc tgc ggc gtt ggc agc acc ccg atc ctg ggc cag	432
Pro Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln	
130 135 140	
tgc gtc gag ttt ctg agg cat cag tgc agc ccg acg gcg acg ccc tac	480
Cys Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr	
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tgc tcg cct cag tgc cag tcg ttg cgg cag cag tgt tgc cag cag ctc	528
Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu	
165 170 175	
agg cag gtg gag ccg cag cac cgg tac cag gcg atc ttc ggc ttg gtc	576
Arg Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val	
180 185 190	
ctc cag tcc atc ctg cag cag cag ccg caa agc ggc cag gtc gcg ggg	624
Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly	
195 200 205	
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35 40 45

Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val  
50 55 60

His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro  
65 70 75 80

Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro  
85 90 95

Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln  
100 105 110

Ile Glu Phe Lys Pro Lys Pro Lys Pro Lys Pro Lys Glu Phe Leu Gln  
115 120 125

Pro Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln  
130 135 140

Cys Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr  
145 150 155 160

Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu  
165 170 175

Arg Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val  
180 185 190

Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly  
195 200 205

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 <223> Xaa = Pro or is absent

<220>  
 <221> VARIANT  
 <222> (60)..(60)  
 <223> Xaa = Lys or is absent

<400> 22

Pro Lys Pro Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 50 55 60

<210> 23  
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 <212> PRT  
 <213> Artificial Sequence

<220>

<223> based on Maize

<400> 23

Lys Pro Lys Pro Lys Pro Lys Pro Lys Lys Pro Lys Pro Lys Pro Lys  
1 5 10 15

Pro Lys

<210> 24

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> based on Maize

<400> 24

Lys Pro Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys  
1 5 10 15

Pro Lys Pro Lys  
20